The bridge to possible

Programming Use Cases for Cisco Digital Network Architecture (DNAPUC) v1.0

What you'll learn in this course

The **Programming Use Cases for Cisco Digital Network Architecture** (DNAPUC) v1.0 course highlights the shift toward the digital enterprise and examines the components, benefits, and use cases of Cisco Digital Network Architecture (Cisco DNA) in an enterprise environment. You will learning about key platforms including Cisco® DNA Center, Cisco WebEx Teams™, Cisco Connected Mobile Experiences (CMX), and their related APIs. This course also covers open standards, tools, and network APIs that you can use to complement the Cisco DNA software portfolio, including Python, JavaScript Object Notation (JSON), Network Configuration Protocol (NETCONF), Representational State Transfer Configuration Protocol (RESTCONF), and Yet Another Next Generation (YANG).

Course duration

- Instructor-led training: 2 days in the classroom with hands-on lab practice
- Virtual instructor-led training: 2 days of web-based classes with hands-on lab practice
- E-learning: Equivalent of 2 days of instruction with hands-on lab practice, videos, and challenges

How you'll benefit

Digitization is disrupting business. To remain viable and competitive, businesses must have a digital strategy that harnesses the power of the network. Cisco DNA is an evolutionary approach that takes advantage of programmable infrastructure and allows operators to manage networks through a combination of intent and policy.

This course will help you:

- Prepare for your organization's shift to a digital network infrastructure
- Understand the possibilities that Cisco DNA, Cisco WebEx Teams, Cisco CMX, and their APIs present to your enterprise network
- Learn how to leverage automation to simplify network management and realize cost savings

Who should enroll

- Sales engineers
- Account managers
- Networking engineers
- Technical and non-technical audiences
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- Account managers
- Networking engineers
- Technical and non-technical audiences

How to enroll

Instructor-led training

- For instructor-led training, visit the Cisco Learning Locator
- Arrange training at your location through Cisco Private Group Training

E-learning

- For e-learning, visit the Cisco Learning Network Store
- For e-learning volume discounts, email ask_cpll@cisco.com
- For digital library access, visit Cisco Digital Learning

Technology areas

- Networking
- Network programmability

Course details

Objectives

After taking this course, you should be able to:

- Understand the role that programmable infrastructure is having on the transition to the digital enterprise
- Describe Cisco DNA, its components and benefits, and explain a few use cases
- Describe the different technologies and solutions within the Cisco programmable infrastructure portfolio
- Describe Cisco DNA Center REST APIs
- Understand the functionality provided by Cisco WebEx Teams
- Describe Cisco CMX, services, and related APIs
- Describe the importance of DevOps culture within network operations in the shift to becoming a digital enterprise

Prerequisites

Before taking this course, you should have the following knowledge and skills:

- CCNA® certification or equivalent experience

The following Cisco learning offering can help you prepare:

- **Programming for Network Engineers** (PRNE)

Outline

- Understanding Programmable Infrastructure
  - Digital Enterprise
  - Four Pillars of Digitization
  - Network Programmability and Automation
  - What Should Be Automated?
  - Quantifying Programmability and Automation for the Business
  - Network Programmability and Automation Use Cases

- Introducing Cisco DNA
  - Cisco DNA Overview
  - Cisco DNA Components
  - Benefits of Cisco DNA
  - Cisco DNA Use Cases
- Describing Programmable Infrastructure
  - Cisco Programmability Options
  - Data Center Infrastructure
  - Enterprise Network Programmability
  - Streaming Telemetry
  - Collaboration
  - Management, Monitoring, and Analytics
- Describing Network APIs
  - How APIs Enable Business Automation
  - API Overview
  - Data Encoding with JSON and XML
  - RESTful APIs
  - RESTCONF and NETCONF Overview
  - Data Modeling with YANG
- Describing Cisco DNA Center APIs
  - Cisco DNA Center Overview
  - Cisco DNA Center Automation Enterprise Benefits
  - Cisco DNA Center Applications and Use Cases
  - Cisco DNA Center REST API Overview
  - Case Study: Network Automation at Symantec
- Describing Cisco Collaboration APIs
  - Cisco Webex Teams Overview
  - Cisco Webex Teams Business Benefits
  - Cisco Webex Teams API Overview
- Describing Cisco Mobility APIs
  - Cisco CMX Overview
  - Cisco CMX Programmability Business Benefits
  - Cisco CMX Mobility Services API Overview
  - Case Study: Victoria University and Cisco CMX
- Implementing DevOps Culture Within Network Operations
  - Transition to DevOps
  - CALMS Model (Culture, Automation, Lean, Measurement, Sharing)
  - Role of Cisco Technology in the Transition to DevOps

Lab outline

- Generate Reports on Cisco Devices Using RESTful APIs

- Configure Cisco Devices Using RESTful APIs

- Get Real-Time Insight with Streaming Telemetry

- Configure Cisco Devices Using RESTful APIs

- Work with Devices That Support Consistent YANG Models with NETCONF and RESTCONF

- Perform Data Validation with YANG Models

- Path Trace an IP Address with Cisco DNA Center and Display the Results

- Display Intent APIs in Cisco DNA Center

- Post Message to Cisco Webex Teams Room with Link Layer Discovery Protocol (LLDP) Neighbors Change

- Discover Cisco CMX Notifications and Clients with GUI and APIs

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CISCO

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